UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,615	10/17/2003	Michael Haubs	05587-00358-US	2436

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EXAMINER
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ART UNIT	PAPER NUMBER
1639	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/688,615	HAUBS ET AL.
	Examiner	Art Unit	
	Jeff Lundgren	1639	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 09 April 2007.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 17-22* is/are pending in the application.

　　4a) Of the above claim(s) *3-6,11-13, and 17-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 7-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Status of the Claims

Claims 1-13 and 17-22 are pending in the instant application; claims 3-6, 11-13 and 17-22 are withdrawn; claims 1, 2 and 7-10 stand rejected from the Office Action mailed on January 17, 2007, and are the subject of the Office Action below.

Objection to the Declaration under 37 C.F.R. § 1.52(c) is Withdrawn.

The substitute Declaration filed on April 9, 2007, complies with 37 C.F.R. § 1.52. Accordingly, the objection to the Declaration filed on March 9, 2004, is withdrawn.

Objection to the Specification under 37 C.F.R. § 1.77(b)(8) is Withdrawn.

The objection to the Specification under 37 C.F.R. § 1.77(b)(8) is withdrawn in view of the substitute pages of the Specification provided by Applicants in the Amendment and having a Brief Description of the Drawings filed on April 9, 2007.

Claim Rejections - 35 USC § 112

Each of the rejections raised in the Office Action mailed on January 17, 2007, is withdrawn in view of Applicants' amendments to the claims, and certain arguments provided (i.e., regarding "compositional resolution").

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The Rejection of Nielsen is Maintained:

The rejection of claims 1, 2 and 7-10, are rejected under 35 U.S.C. § 102(b) as being anticipated by Nielsen *et al.*, Int. Pub. No. WO 02/38354, published on May 16, 2002, is maintained.

Applicants allege that Nielsen cannot anticipate their claimed invention because they purport that Nielsen does not teach "periodic" variations in the conveying rate:

> "According to the "Wikipedia" internet encyclopedia "periodic" is defined *as an interval of time within which an event, chain of events, instance or happening takes place.* It is *measured between a starting point and an ending point* and *generally repeats, or progresses, in a cycle with the end point of one period being the start point of the next.* In mathematics, a function whose output contains values that repeat periodically is called a periodic function."

Amendment received on April 9, 2007, page 9, third full paragraph (emphasis added).

Applicants' arguments have been considered, but are not persuasive for the following reasons.

Applicants claim construction of the term "periodically" is incorrect because it appears that their arguments suggest that for a conveying rate to be "periodic," the rate must possess a cyclic nature similar to a sine waveform or a sawtooth waveform. The first part of the definition provided by Applicants from Wikipedia is met by the teaching of Nielsen's conveying rates; "...an interval of time within which an event, chain of events, instance or happening takes place. It is measured between a starting point and an ending point..." (compare to Figure However, it is noted that the second half of Applicants' definition provided from Wikipedia is not a requirement; "...and *generally* repeats, or progresses, in a cycle with the end point of one period being the start point of the next. This second half of the definition from Wikipedia is not a requirement, but provides context.
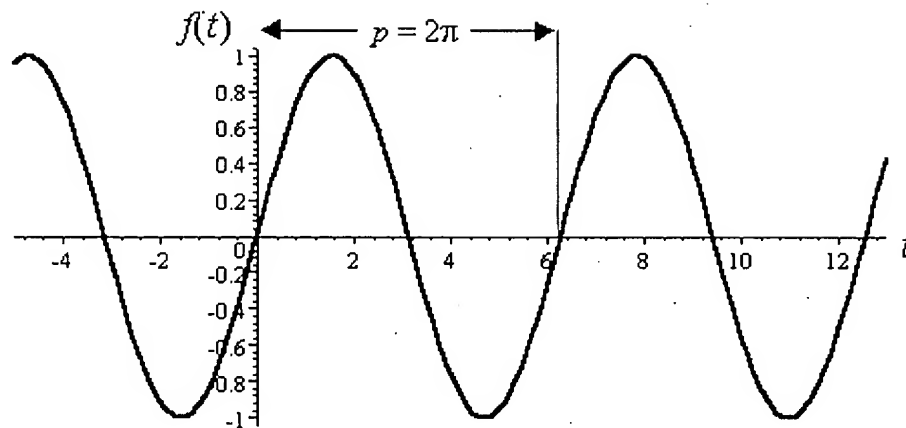
Instead, a more appropriate mathematical understanding of a function *f(t)* which is considered to be "periodic" with period *p* is:

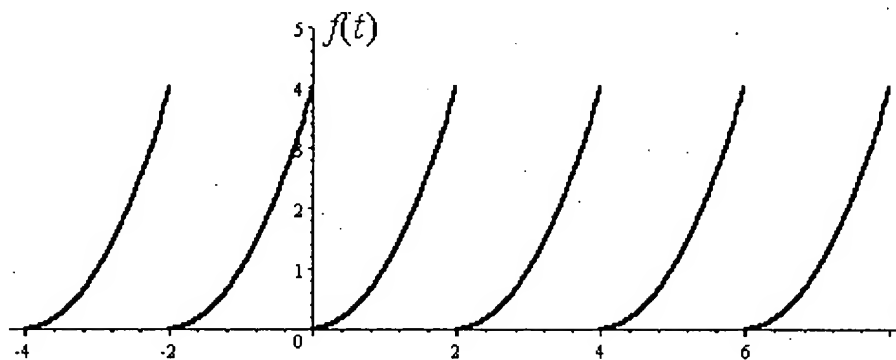$$f(t + p) = f(t)$$

for all values of *t* and if *p* > 0.

A common periodic function likely to satisfy the Wikipedia definition, and also meets the criteria of the proviso of "generally repeating or progressing in a cycle with an endpoint of one period being the starting point of the next period," can be illustrated by the following graphical representation and equation for a sine function:

where, $f(t) = \sin t$, and when $f(t)$ is periodic, $f(t) = f(t + 2\pi)$, wherein the period is 2π.

A less commonly expressed form of a periodic function, for example, might be a parabolic function, wherein $p = 2$, and the following would be the corresponding graphical representation of the function $f(t)$ below.

In this example, the function $f(t)$ for the above figure is represented by the following expression:
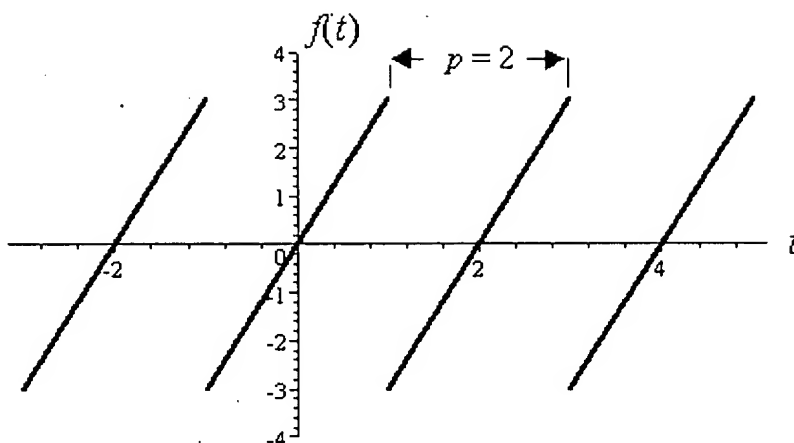
$f(t) = t^2$ (for $0 \le t < 2$);

$f(t) = f(t + 2)$ [indicating that it is periodic with period 2].

What is important to note, is that both of these functions, by definition, are "periodic," even though the latter function is not a "continuous" periodic function.

Another periodic function is as follows:

wherein the function is expressed:

$f(t) = 3t$ (for $-1 \leq t < 1$);

$f(t) = f(t + 2)$ [this indicates that the function is periodic with $p = 2$].

Therefore, for a conveying rate to vary "periodically," the rate only needs to fit a "periodic" function, such as in Figure 1 of Nielsen; the rate does not need to fun through full cycles or periods to be determined to be periodic. The conveying rate may be varied for any segment of time t, such as from the values 0.1 to 0.5 for the graph above, and would in this case be graphically represented as a straight line with a slope of 3, passing through the y coordinates 0.3 and 1.5, respectively. Nonetheless, such a conveying rate would be "periodic".

Claim 1 is directed to delivering two or more components to a mixing device wherein the rate at which one components is provided at a periodic rate.

As in claim 1, Nielsen teaches a method for production of a polymer product with varying hardness comprising adding together and mixing at least two substances with predetermined relative amounts, filling the substances after mixing into a form, and hardening of the substances to a solid elastic product. According to the invention, the relative amounts of the substances are continuously varied during filling of the form in order to achieve a product with continuously varying hardness within the product (see Figures 1 and 2, and description thereof). Nielsen states:

> "The flowing speed of the different substances to be mixed is calculated by the computer 301. For example, this can be achieved by interpolation between the data as shown in Table 2. From these data, a polynomial equation can be calculated which describes the continues variation of the flow speed for the different substances by regulation of the speed for each

of the pump motors 206. Being able to produce elastomer products with continuously varying hardness within the product, several known problems may be solved.

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Nielsen, page 6, lines 23-30.

As in claim 2, at least one of the rates is varied periodically and one rate continuously rises (see Figure 1). As in claim 7, the conveying rates in proportional to a give compositional resolution (see Figure 1). As in claim 8, the total conveying rates are constant in order to produce continuously varying hard films (page 6, lines 23-30). As in claim 9, each one of the components is a liquid, solid or gas. As in claim 10, Nielsen teaches polymer melts and additives (see Table 1 on pages 3 and 4).

Conclusions

No claim is allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
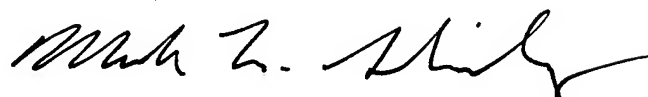
If Applicants should amendment the claims, a complete and responsive reply will clearly identify where support can be found in the disclosure for each amendment. Applicants should point to the page and line numbers of the application corresponding to each amendment, and provide any statements that might help to identify support for the claimed invention (*e.g.*, if the amendment is not supported *in ipsis verbis*, clarification on the record may be helpful). Should Applicants present new claims, Applicants should clearly identify where support can be found in the disclosure.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jeff Lundgren whose telephone number is 571-272-5541. The Examiner can normally be reached from 7:00 AM to 5:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, James Schultz, can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSL

MARK L. SHIBUYA
PRIMARY EXAMINER